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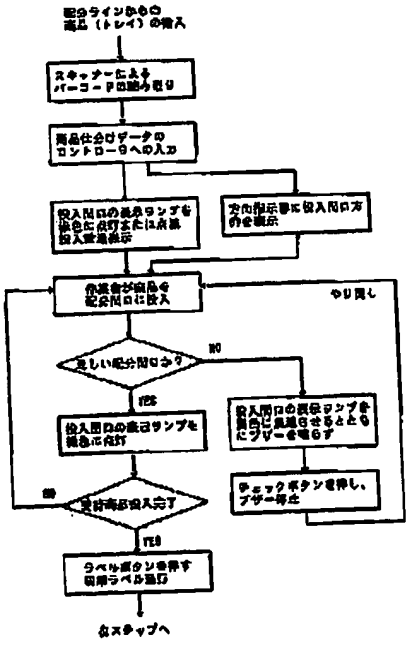
(54)【発明の名称】　商品仕分け装置

(57)【要約】
【課題】　従来の投入表示器を用いた商品仕分け装置に比べ、作業者の負担を軽減するようにして、作業効率を向上させ、商品の誤投入率を低減する。
【解決手段】　搬入されてきた商品のラベルをバーコードスキャナで読み取り、コントローラへ商品仕分けデータを入力する。単一の作業者が担当する仕分けブロックの複数の配分間口のうち、商品を投入すべき配分間口の表示ランプを点灯または点滅させ、さらに商品の投入数量を表示する。表示ランプとは別個に、一つの仕分けブロックに対し一つの方向指示器を設け、コントローラからの制御信号により、商品を投入すべき配分間口の方向を矢印等で表示する。作業者は方向指示器の表示方向に従って投入間口を見付け、表示ランプが点灯または点滅している配分間口に所定の数量の商品を投入する。



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【特許請求の範囲】

【請求項１】　仕分け区分に応じて商品が投入される複数の配分間口を備えた仕分けブロックと、仕分けのために搬入されてくる単一または一群の商品に付与された商品仕分けデータを読み取る読取り手段と、前記読取り手段から入力された商品仕分けデータに基づいて、当該商品を投入すべき配分間口を指示するコントローラとを有する商品仕分け装置において、前記仕分けブロック内に、商品を投入すべき配分間口の方向を表示する方向指示器を設け、前記コントローラによって前記方向指示器の表示方向を制御するよう構成したことを特徴とする商品仕分け装置。

【請求項２】　前記読取り手段は、商品に貼付したラベルに表示された商品仕分けデータを読み取り、前記コントローラに入力するスキャナである請求項１記載の商品仕分け装置。

【請求項３】　前記方向指示器は、所定の仕分けブロックを担当する作業者が搬入されてきた商品を受け取る商品受取り位置近傍に設置されている請求項１または２記載の商品仕分け装置。

【請求項４】　前記方向指示器に加え、各配分間口部分にも搬入されてきた商品の投入位置であることを示す投入表示器が設置されており、前記コントローラからの制御信号により投入表示器のランプを点灯または点滅させるよう構成した請求項１、２または３記載の商品仕分け装置。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本願発明は、仕分けのために搬入されてくる商品を、作業者が仕分け棚等の所定の商品配分間口に投入する際の作業を簡易化するための商品仕分け装置に関するもので、例えば商品配送センターにおける各種仕分け作業等に利用することができる。

【０００２】

【従来の技術】商品配送センターにおける自動化された仕分けシステムの一つとして、納品先や商品の種類に応じて区分した仕分け棚等の配分間口を利用して、商品の仕分けを行う方法がある。

【０００３】その一つの方式としては、例えば、商品納入業者が搬入してきた商品に、商品の種類や個数、納品先等に関する商品仕分けデータを付与し、これをトレイ等に載せた状態で、ベルトコンベア等の搬送装置で仕分けエリアまで搬送し、各仕分けブロックに設置したコントローラに接続したスキャナで商品仕分けデータを読み取り、コントローラの指示により所定の数量の商品を所定の配分間口に投入する作業を繰り返すことで、納品先の注文に応じた仕分けを行うものがある。

【０００４】コントローラによる指示方法としては、各配分間口の上部等に、商品投入位置であることを示す表示ランプや投入すべき商品の個数を表示する個数表示器等を備えた投入表示器を設け、これらをコントローラで制御することが行われている（例えば、特開平８－８５６０９号公報参照）。

【０００５】また、各配分間口には、通常、樹脂製の折畳み式コンテナ等が設置され、コンテナが満杯になった時点あるいは所定量の商品が投入された時点で、納品先に対する明細ラベル等を発行し、コンテナごと再びベルトコンベア等の搬送装置で配送エリアまで搬送し、トラック等に積み込んで、仕向先に納品される。

【０００６】なお、仕分けシステムの制御については、ホストコンピュータと、端末としての各コントローラを接続して制御を行う方式や、コントローラをホストコンピュータとは切り離して、商品納入業者の納品時あるいは納品前に付与される商品仕分けデータに基づいて、仕分け制御を行う方式等がある。

【０００７】

【発明が解決しようとする課題】上述した従来の投入表示器は、複数の配分間口からなる仕分けブロックを担当する作業者が、搬送されてきた商品を投入すべき間口を容易に見つけ出すことができるようにし、それによって作業効率の向上、商品の誤投入の防止を図ったものである。

【０００８】しかしながら、配分間口は作業者の商品受取り位置に対し左右あるいは前後左右にあり、また搬送されてきた商品を投入すべき配分間口が複数ある場合には、通常、複数の配分間口の投入表示器が同時に作動することから、作業者は広い範囲を見渡す必要があり、場合によっては複数の配分間口を同時に判断しなければならない。

【０００９】本願発明は、このような従来の投入表示器を用いた方式における作業者の負担を軽減することにより、作業効率をさらに向上させ、商品の誤投入率を大幅に低減することを目的としたものである。

【００１０】

【課題を解決するための手段】本願の請求項１に係る発明は、仕分け区分に応じて商品が投入される複数の配分間口を備えた仕分けブロックと、仕分けのために搬入されてくる単一または一群の商品に付与された商品仕分けデータを読み取る読取り手段と、前記読取り手段から入力された商品仕分けデータに基づいて、当該商品を投入すべき配分間口を指示するコントローラとを有する商品仕分け装置において、前記仕分けブロック内に、商品を投入すべき配分間口の方向を指示する方向指示器を設け、前記コントローラによって前記方向指示器の指示方向を制御するよう構成したことを特徴とするものである。

【００１１】なお、ここでいう仕分けブロックは、多数の配分間口のうちの一人の作業者が担当する範囲を指すものとする。コントローラは、仕分けシステム全体を制御するホストコンピュータの端末として機能するものに

限らず、仕分けブロックごと単独で制御を行うものであってもよい。

【００１２】方向指示器は、一般的には液晶画面に配分間口の方向を矢印等で表示するものを考えているが、何らかの形で配分間口の方向を指示するものであれば、特に限定されない。

【００１３】請求項２は、請求項１に係る商品仕分け装置において、読取り手段がスキャナの場合であり、スキャナで商品に貼付したラベルに表示された商品仕分けデータを読み取り、コントローラに入力し、コントローラによって仕分け制御が行われる。

【００１４】より具体的には、通常、一群の商品に対し、その商品の種類や個数、納品先（仕向先）、必要に応じ納品業者等のデータをバーコード等の形でラベルに印刷したものをバーコードスキャナ等で読み取り、コントローラに入力する。

【００１５】なお、商品仕分けデータを表示するラベルは、商品に直接貼付される場合の他、商品をトレイあるいはコンテナ等に載せて搬送する場合は、ラベルをトレイあるいはコンテナに貼付する場合もある。

【００１６】請求項３は、請求項１または２に係る商品仕分け装置において、方向指示器が所定の仕分けブロックを担当する作業者の商品受取り位置近傍に設置されている場合である。

【００１７】方向指示器は、基本的には単に次に投入すべき配分間口の方向を指示するものであるため、作業者が搬入されてきた商品を受け取る位置近傍に設けるのが、最も効率的である。ただし、配分間口が作業者の前後左右にある場合には一人の作業範囲内に２以上の方向指示器が設置される場合もあり得る。

【００１８】また、仕分け棚の形で、高さ方向に複数段の配分間口がある場合には、仕分け棚の作業範囲中央に鉛直面内で各配分間口方向を指示する方向指示器を設けたり、仕分け棚が作業者の両側にある場合には、両側の仕分け棚間の中央に、鉛直面内で各配分間口方向を指示する方向指示器を設けることも考えられる。

【００１９】請求項４は、請求項１または２に係る商品仕分け装置において、方向指示器に加え、各配分間口部分にも搬入されてきた商品の投入位置であることを示す投入表示器が設置されており、コントローラからの制御信号により投入表示器のランプを点灯または点滅させるよう構成した場合である。

【００２０】上述のように、方向指示器は、基本的には次に投入すべき配分間口の方向を指示するものであり、従来の表示ランプや個数表示器等を備えた投入表示器と併用することで、作業効率を上げることができる。

【００２１】ただし、本願発明において投入表示器は必須ではなく、例えば方向指示器に配分間口に関する指示が同時に表示されるものや、配分間口に開閉式の扉が設け、コントローラによって投入すべき間口の開閉を制御

するもの等と併用することも可能である。

【００２２】

【発明の実施の形態】次に、本願発明の好ましい一実施形態を図面に基づいて説明する。図２は仕分けエリアに設置され、商品仕分け装置を構成する仕分け棚１部分の一例を示したものである。この例では上下２段の仕分け棚１の下段に１２個、上段に１１個の樹脂製の折畳み式コンテナ３が設置され、合計２３の配分間口２を形成している。

【００２３】このうち、中央より左側の１２個の配分間口２が、１人目の作業者の受け持つ仕分けブロックを構成し、中央下段を含む右側の１１個の配分間口２が２人目の作業者の受け持つ仕分けブロックを構成し、搬送されてくる一群の商品を２人の作業者でリレー式に取り扱うシステムとなっている。

【００２４】下段には、さらに固定式のバーコードスキャナ６が取り付けられており、図３のイメージ図のように、配分ラインからベルトコンベア４によって搬送されてくる一群の商品５の商品仕分けデータを読み取る。

【００２５】なお、この例では、１種類複数の商品がトレイ等に載せられてベルトコンベア４によって搬送され、バーコードスキャナ６でトレイに貼付したラベルに印刷されている商品仕分けデータを読み取り、商品の個数、納品先に応じた配分間口等が、上段中央部のコントローラ７に入力される。

【００２６】また、各配分間口２の上部または下部には、それぞれ図５に示すような投入表示器９が設けられ、コントローラ７からの制御信号により投入表示器９の表示ランプ１０および個数表示器１２を制御することで、商品を投入すべき配分間口２およびその配分間口２に投入すべき商品の個数が表示される。

【００２７】図５は、その表示状態を示したもので、表示ランプ１０が赤色に点灯し、また個数表示器１２が個数（この例では６個）を表示している。なお、通常は、１つのトレイに複数の商品が載せられた状態で搬送されてくる。従って、同時に搬送されてきた商品を複数の配分間口２に投入する場合には、複数の配分間口２の表示ランプが赤色に点灯し、順次、赤色が点滅することで、作業者に投入順を知らせるようになっている。

【００２８】さらに、左右それぞれの仕分けブロックについて、仕分け棚１の中段に方向指示器８が取り付けられており、コントローラ７で指示された配分間口２の方向を矢印で表示するようになっている。この方向指示器８の制御は、投入表示器９の表示ランプ１０の制御と連動させて行うことができる。

【００２９】また、仕分け棚１の各配分間口２の両側には、それぞれ１対の透過形赤外線センサ１４が設けられており、コンテナ３に商品を投入する際、商品および作業者の手が通過するのを検知するようになっている。

【００３０】検知信号は、コントローラ７に入力され、

商品投入位置が正しい場合には、コントローラ７より、図６に示すように表示ランプ１０を緑色に点灯させるための制御信号が発せられる。

【００３１】もし、商品投入位置が誤っている場合には、コントローラ７から制御信号が発せられ、図７に示すように表示ランプ１０が黄色に点滅すると同時に、コントローラ７によって制御されるブザー（図示せず）が警報音を発するようになっている。その場合、作業者は表示ランプ１０の脇にあるチェックボタン１１を押すことで、表示ランプ１０の点滅およびブザーを止め、正しい配分開口に商品を投入し直すことになる。

【００３２】図１はこの一連の流れをフロー図として示したもので、作業者が担当する仕分けブロックへの商品投入が完了したら、投入表示器９の右端に設けたラベル発行ボタン１３を押し、納品先へ添付される明細ラベルをコントローラ７の下に位置するラベル発行機１５から発行する。ただし、この明細ラベルの発行は、その配分開口２にあるコンテナ３に仕分けされる全商品が投入された後に行われ、全商品の投入が完了するまでは、次に搬送されて来る商品の仕分け作業が繰り返される。

【００３３】

【発明の効果】本願発明の商品仕分け装置は、従来の投入表示器が個々の配分開口ごとに設けられ、視覚による全体の把握が困難であったのに対し、仕分けブロックの１箇所に設けた方向指示器が商品を投入すべき配分開口の方向を指示するため、仕分けブロック全体を見渡さなくとも直ちに配分開口への商品投入操作を行うことができ＊き、作業効率が向上する。

【００３４】また、作業者の負担が軽減されることで、商品の誤投入率も大幅に低減することができる。

【図面の簡単な説明】

【図１】本願発明の一実施形態における商品仕分け装置による作業のフロー図である。

【図２】本願発明に係る商品仕分け装置の仕分け棚部分の正面図である。

【図３】商品仕分け装置位置への商品の搬入の様子を示す概念図である。

【図４】仕分けブロックごとに設置される方向指示器の表示形式の一例を示す図である。

【図５】配分開口ごとに設置される投入表示器が、投入開口位置および投入個数の表示している状態を示す正面図である。

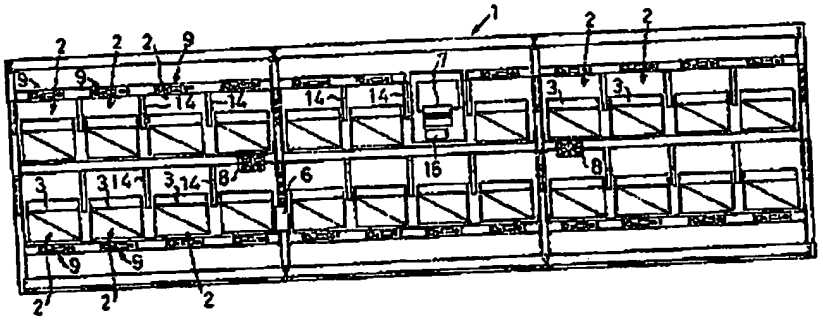
【図６】商品の投入が正しく行われた場合の表示状態を示す投入表示器の正面図である。

【図７】商品が誤投入された場合の表示状態を示す投入表示器の正面図である。

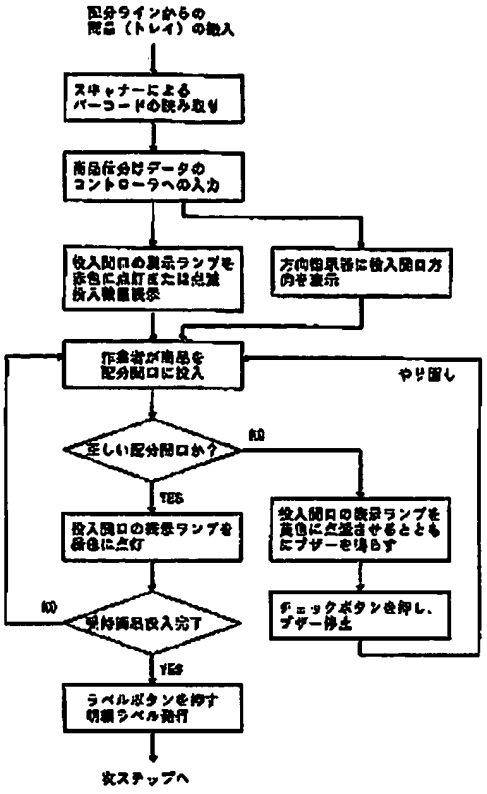
【符号の説明】

１…仕分け棚、２…配分開口、３…コンテナ、４…ベルトコンベア、５…商品、６…バーコードスキャナ、７…コントローラ、８…方向指示器、９…投入表示器、１０…表示ランプ、１１…チェックボタン、１２…個数表示器、１３…明細ラベル発行ボタン、１４…透過形赤外線センサ、１５…ラベル発行機

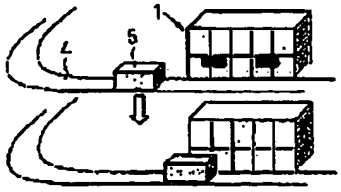
【図２】



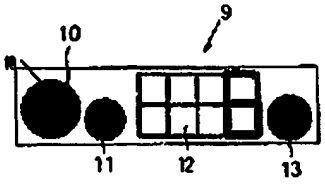
【図1】



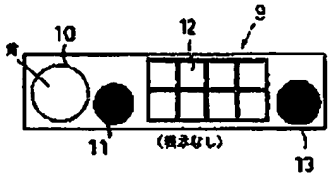
【図3】



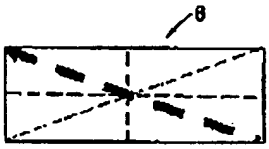
【図6】



【図7】



【図4】



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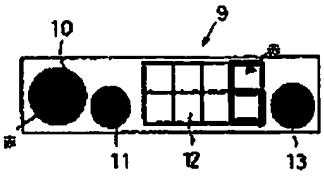

PATENT ABSTRACTS OF JAPAN

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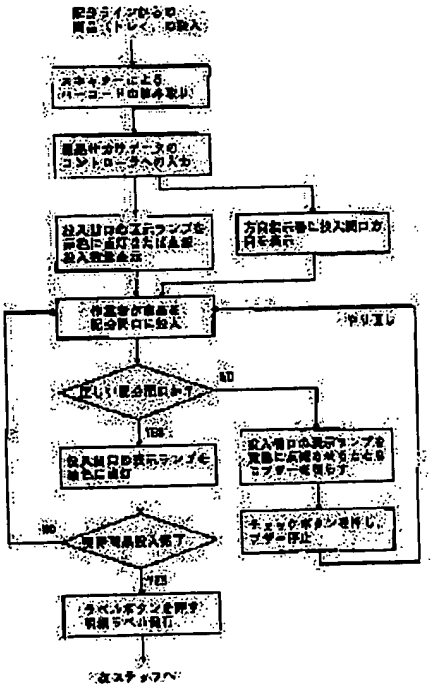
(71)Applicant : AT & C:KK
(72)Inventor : TAKIZAWA CHIYUKI

(54) GOODS SORTING DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To improve working efficiency and to reduce erroneous inputting rate of goods by reducing burden of a worker in comparison with a goods sorting device using a conventional input indicator.
SOLUTION: A label of deposited goods is read by a bar code scanner, and a goods sorting data is input to a controller. Input quantity of goods is indicated by putting on or flashing an indication lamp of a distribution frontage to input the goods out of a plural number of the distribution frontages of a classification block which a single worker is in charge of. Separately from the indication lamp, one direction indicator is provided for the one classification block, and a direction of the distribution frontage to input the goods to is indicated by an arrow, etc., by a control signal from the controller. The worker finds an input frontage in accordance with an indication direction of the direction indicator and inputs specified quantity of the goods in the distribution frontage on which the indication lamp is put on or flashes.



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[Date of extinction of right]	

CLAIMS

[Claim(s)]
[Claim 1] The classification block equipped with two or more allocation frontages into which goods are thrown according to a classification partition, the single carried in for classification, or a group -- with a read means to read the goods classification data given to goods In the goods assortment equipment which has the controller which directs the allocation frontage which should throw in the goods concerned based on the goods classification data inputted from said read means Goods assortment equipment characterized by constituting so that the turn signal which displays the direction of the allocation frontage which should throw in goods may be formed in said classification block and the display direction of said turn signal may be controlled by said controller.
[Claim 2] Said read means is goods assortment equipment according to claim 1 which is the scanner which reads the goods classification data displayed on the label stuck on goods, and is inputted into said controller.
[Claim 3] Said turn signal is goods assortment equipment according to claim 1 or 2 currently installed near the goods receipt location which receives the goods with which the operator who takes charge of a predetermined classification block has been carried in.
[Claim 4] Goods assortment equipment according to claim 1, 2, or 3 constituted so that the injection drop which shows that it is the injection location of the goods carried in also to each allocation frontage part might be installed in addition to said turn signal and the lamp of an injection drop might be turned on or blinked with the control signal from said controller.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] The invention in this application is applicable to various classification activities [in / a goods delivery center] etc. about the goods assortment equipment for simplifying the activity at the time of an operator throwing the goods carried in for classification into predetermined goods allocation frontages, such as a classification shelf.
[0002]
[Description of the Prior Art] There is the approach of classifying goods using allocation frontages, such as a classification shelf classified according to the class of a delivery-of-goods place or goods as one of the automated classification systems in a goods delivery center.
[0003] It is in the condition which gave the goods classification data about the class of goods, the number, a delivery-of-goods place, etc. to the goods which the goods delivery contractor has carried in, and put this on the tray etc. as the one method, for example. Convey to classification area by transport devices, such as a band conveyor, and goods classification data are read with the scanner linked to the controller installed in each classification block. There are some which perform classification according to the order of a delivery-of-goods place by repeating the activity which throws the goods of predetermined quantity into a predetermined allocation frontage with directions of a controller.
[0004] As the directions approach by the controller, the injection drop equipped with the number drop which displays the number of the display lamp in which it is shown that it is a goods injection location, or the goods which should be thrown in is formed in the upper part of each allocation frontage etc., and controlling these by the controller is performed (for example, refer to JP,8-85609,A).
[0005] Moreover, a detail [as opposed to / when the goods of the time of the folding type container of the product made of resin usually etc. being installed in each allocation frontage and a container filling or the specified quantity were thrown in / a delivery-of-goods place] label etc. is published, and it conveys to delivery area by transport devices, such as a band conveyor, again the whole container, it loads into a truck etc., and a destination is delivered.
[0006] In addition, about control of a classification system, there are a method which controls by connecting each controller as a terminal with a host computer, a method which performs classification control based on the goods classification data which a host computer separates a controller and are given before the time of a goods delivery contractor's delivery of goods or delivery of goods.
[0007]
[Problem(s) to be Solved by the Invention] The operator who takes charge of the classification block which consists of two or more allocation frontages enables it to find out the frontage which should throw in the conveyed goods easily, and the conventional injection indicator mentioned above aims at improvement in working efficiency, and prevention of an incorrect injection of goods by it.
[0008] However, when there are two or more allocation frontages which an allocation frontage has in

right and left or front and rear, right and left to an operator's goods receipt location, and should throw in the conveyed goods, since the injection drop of two or more allocation frontages operates to coincidence, an operator needs to overlook the large range and usually has to judge two or more allocation frontages to coincidence depending on the case.

[0009] By mitigating an operator's burden in the method which used such a conventional injection drop, the invention in this application raises working efficiency further, and aims at reducing the rate of an incorrect injection of goods sharply.

[0010]

[Means for Solving the Problem] The classification block whose invention concerning claim 1 of this application was equipped with two or more allocation frontages into which goods are thrown according to a classification partition, the single carried in for classification, or a group -- with a read means to read the goods classification data given to goods In the goods assortment equipment which has the controller which directs the allocation frontage which should throw in the goods concerned based on the goods classification data inputted from said read means In said classification block, the turn signal which shows the direction of the allocation frontage which should throw in goods is formed, and it is characterized by constituting so that the directions direction of said turn signal may be controlled by said controller.

[0011] In addition, a classification block here shall point out the range which one operator in many allocation frontages takes charge of. A controller may control independently what [not only] functions as a terminal of the host computer which controls the whole classification system but the whole classification block.

[0012] Generally, although what displays the direction of an allocation frontage on a liquid crystal screen by an arrow head etc. is considered, a turn signal will not be especially limited, if the direction of an allocation frontage is shown in a certain form.

[0013] In the goods assortment equipment which claim 2 requires for claim 1, it is the case where a read means is a scanner, and the goods classification data displayed on the label stuck on goods with the scanner are read, it inputs into a controller, and classification control is performed by the controller.

[0014] more -- concrete -- usually -- a group -- what printed data, such as a delivery-of-goods contractor, on the label in forms, such as a bar code, the class of the goods, the number, a delivery-of-goods place (destination), and if needed is read with a bar code scanner etc. to goods, and it inputs into a controller.

[0015] In addition, the label which displays goods classification data may stick a label on a tray or a container, when putting goods besides in the case of being directly stuck on goods on a tray or a container and conveying them.

[0016] Claim 3 is the case where the turn signal is installed near the goods receipt location of the operator who takes charge of a predetermined classification block, in the goods assortment equipment concerning claims 1 or 2.

[0017] Since a turn signal is what shows the direction of the allocation frontage which should only be supplied to a degree, it is fundamentally most efficient to prepare near the location which receives the goods with which the operator has been carried in. However, when an allocation frontage is in an operator's front and rear, right and left, two or more turn signals may be installed in one person's activity within the limits.

[0018] Moreover, when the turn signal which shows each allocation frontage direction within a vertical plane is formed in the center of the activity range of a classification shelf in the form of a classification shelf when there are two or more steps of allocation frontages in the height direction, or a classification shelf is in an operator's both sides, forming the turn signal which shows each allocation frontage direction within a vertical plane in the center between the classification shelves of both sides is also considered.

[0019] In the goods assortment equipment concerning claims 1 or 2, in addition to the turn signal, the

injection drop which shows that it is the injection location of the goods carried in also to each allocation frontage part is installed, and claim 4 is the case where it constitutes so that the lamp of an injection drop may be turned on or blinked with the control signal from a controller.
[0020] As mentioned above, fundamentally, a turn signal shows the direction of the allocation frontage which should be supplied to a degree, and can raise working efficiency by using together with the injection drop equipped with a conventional display lamp, a conventional number drop, etc.
[0021] However, in the invention in this application, an injection drop is not indispensable, for example, it is also possible to use together with what the directions about an allocation frontage are displayed on a turn signal as by coincidence, the thing which controls closing motion of the frontage which the door of a closing motion type should prepare in an allocation frontage, and should be supplied by the controller.
[0022]
[Embodiment of the Invention] Next, 1 desirable operation gestalt of the invention in this application is explained based on a drawing. Drawing 2 is installed in classification area and shows an example of classification shelf 1 part which constitutes goods assortment equipment. In this example, 11 fold-up formula containers 3 made of resin are installed in 12 pieces and an upper case by the lower berth of the classification shelf 1 of two steps of upper and lower sides, and allocation frontage 2 of a total of 23 is formed.
[0023] among these, a group which the allocation frontage 2 of 12 pieces on the left of a center constitutes the classification block which the 1st operator takes charge of, and the allocation frontage 2 of 11 pieces of the right-hand side containing the central lower berth constitutes the classification block which the 2nd operator takes charge of, and is conveyed -- it is the system which deals with goods at a relay ceremony by two operators.
[0024] a group which the fixed bar code scanner 6 is further attached in the lower berth, and is conveyed on a band conveyor 4 from allocation Rhine as shown in the image Fig. of drawing 3 -- the goods classification data of goods 5 are read.
[0025] In addition, in this example, the goods of one-kind plurality are put on a tray etc., it is conveyed on a band conveyor 4, the goods classification data currently printed by the label stuck on the tray with the bar code scanner 6 are read, and the allocation frontage according to the number of goods and a delivery-of-goods place etc. is inputted into the controller 7 of an upper case center section.
[0026] Moreover, the injection drop 9 as shown in drawing 5 , respectively is formed in the upper part or the lower part of each allocation frontage 2, and the number of the goods which should be thrown into the allocation frontage 2 which should throw in goods, and its allocation frontage 2 by controlling the display lamp 10 of the injection drop 9 and the number drop 12 by the control signal from a controller 7 is displayed on it.
[0027] Drawing 5 is what showed that display condition, a display lamp 10 lights up in red, and the number drop 12 shows the number (this example six pieces). In addition, where two or more goods are put on one tray, it is usually conveyed. Therefore, in throwing into two or more allocation frontages 2 the goods conveyed by coincidence, the display lamp of two or more allocation frontages 2 lights up in red, and it tells an operator about the order of an injection one by one because red blinks.
[0028] Furthermore, the turn signal 8 is attached in the middle of the classification shelf 1 about the classification block of each right and left, and the direction of the allocation frontage 2 directed by the controller 7 is expressed as an arrow head. Control of this turn signal 8 can be performed by making it control of the display lamp 10 of the injection drop 9 interlocked with.
[0029] Moreover, in case one pair of transparency form infrared sensors 14 are formed in the both sides of each allocation frontage 2 of the classification shelf 1, respectively and goods are fed into a container 3, it detects that the hand of goods and an operator passes.
[0030] A detection signal is inputted into a controller 7 and a control signal for a goods injection location to make a right case turning on a display lamp 10 green from a controller 7, as shown at

drawing 6 is emitted.

[0031] When the goods injection location is mistaken, a control signal is emitted from a controller 7, and the buzzer (not shown) controlled by the controller 7 emits an alarm tone at the same time a pilot light 10 blinks in yellow, as shown in drawing 7 . In that case, an operator is pushing the check carbon button 11 in the side of a pilot light 10, and will rethrow goods into a stop and a right allocation frontage for flashing and the buzzer of a pilot light 10.

[0032] Drawing 1 is what showed this flow of a series of as a flow Fig., and if the goods injection to the classification block which an operator takes charge of is completed, it will publish the detail label attached at push and a delivery-of-goods place in the label issue carbon button 13 prepared in the right end of the injection indicator 9 from the label issue machine 15 located under a controller 7. However, the classification activity of the goods conveyed next is repeated until issue of this detail label is performed after all the commodity classified by the container 3 in that allocation frontage 2 are supplied, and the injection of all the commodity is completed.

[0033]

[Effect of the Invention] In order that the goods assortment equipment of the invention in this application may show the direction of an allocation frontage where the turn signal which the conventional injection drop was formed for each allocation frontage of every, and was formed in one place of a classification block to grasp of the whole by vision having been difficult for should throw in goods, even if it does not overlook the whole classification block, it can perform goods closing operation to an allocation frontage immediately, and its working efficiency improves.

[0034] Moreover, the rate of an incorrect injection of goods can also be sharply reduced by an operator's burden being mitigated.

[Translation done.]

* NOTICES *

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3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] The invention in this application is applicable to various classification activities [in / a goods delivery center] etc. about the goods assortment equipment for simplifying the activity at the time of an operator throwing the goods carried in for classification into predetermined goods allocation frontages, such as a classification shelf.

[Translation done.]

PRIOR ART

[Description of the Prior Art] There is the approach of classifying goods using allocation frontages, such as a classification shelf classified according to the class of a delivery-of-goods place or goods as one of the automated classification systems in a goods delivery center.
[0003] It is in the condition which gave the goods classification data about the class of goods, the number, a delivery-of-goods place, etc. to the goods which the goods delivery contractor has carried in, and put this on the tray etc. as the one method, for example. Convey to classification area by transport devices, such as a band conveyor, and goods classification data are read with the scanner linked to the controller installed in each classification block. There are some which perform classification according to the order of a delivery-of-goods place by repeating the activity which throws the goods of predetermined quantity into a predetermined allocation frontage with directions of a controller.
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[0006] In addition, about control of a classification system, there are a method which controls by connecting each controller as a terminal with a host computer, a method which performs classification control based on the goods classification data which a host computer separates a controller and are given before the time of a goods delivery contractor's delivery of goods or delivery of goods.

[Translation done.]

EFFECT OF THE INVENTION

[Effect of the Invention] In order that the goods assortment equipment of the invention in this application may show the direction of an allocation frontage where the turn signal which the conventional injection drop was formed for each allocation frontage of every, and was formed in one place of a classification block to grasp of the whole by vision having been difficult for should throw in goods, even if it does not overlook the whole classification block, it can perform goods closing operation to an allocation frontage immediately, and its working efficiency improves.
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[0009] By mitigating an operator's burden in the method which used such a conventional injection drop, the invention in this application raises working efficiency further, and aims at reducing the rate of an incorrect injection of goods sharply.

[Translation done.]

MEANS

[Means for Solving the Problem] The classification block whose invention concerning claim 1 of this application was equipped with two or more allocation frontages into which goods are thrown according to a classification partition, the single carried in for classification, or a group -- with a read means to read the goods classification data given to goods In the goods assortment equipment which has the controller which directs the allocation frontage which should throw in the goods concerned based on the goods classification data inputted from said read means In said classification block, the turn signal which shows the direction of the allocation frontage which should throw in goods is formed, and it is characterized by constituting so that the directions direction of said turn signal may be controlled by said controller.

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[0015] In addition, the label which displays goods classification data may stick a label on a tray or a container, when putting goods besides in the case of being directly stuck on goods on a tray or a container and conveying them.

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[0017] Since a turn signal is what shows the direction of the allocation frontage which should only be supplied to a degree, it is fundamentally most efficient to prepare near the location which receives the goods with which the operator has been carried in. However, when an allocation frontage is in an operator's front and rear, right and left, two or more turn signals may be installed in one person's activity within the limits.

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[0022]

[Embodiment of the Invention] Next, 1 desirable operation gestalt of the invention in this application is explained based on a drawing. Drawing 2 is installed in classification area and shows an example of classification shelf 1 part which constitutes goods assortment equipment. In this example, 11 fold-up formula containers 3 made of resin are installed in 12 pieces and an upper case by the lower berth of the classification shelf 1 of two steps of upper and lower sides, and allocation frontage 2 of a total of 23 is formed.

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[0025] In addition, in this example, the goods of one-kind plurality are put on a tray etc., it is conveyed on a band conveyor 4, the goods classification data currently printed by the label stuck on the tray with the bar code scanner 6 are read, and the allocation frontage according to the number of goods and a delivery-of-goods place etc. is inputted into the controller 7 of an upper case center section.

[0026] Moreover, the injection drop 9 as shown in drawing 5 , respectively is formed in the upper part or the lower part of each allocation frontage 2, and the number of the goods which should be thrown into the allocation frontage 2 which should throw in goods, and its allocation frontage 2 by controlling the display lamp 10 of the injection drop 9 and the number drop 12 by the control signal from a controller 7 is displayed on it.

[0027] Drawing 5 is what showed that display condition, a display lamp 10 lights up in red, and the number drop 12 shows the number (this example six pieces). In addition, where two or more goods are put on one tray, it is usually conveyed. Therefore, in throwing into two or more allocation frontages 2 the goods conveyed by coincidence, the display lamp of two or more allocation frontages 2 lights up in red, and it tells an operator about the order of an injection one by one because red blinks.

[0028] Furthermore, the turn signal 8 is attached in the middle of the classification shelf 1 about the classification block of each right and left, and the direction of the allocation frontage 2 directed by the controller 7 is expressed as an arrow head. Control of this turn signal 8 can be performed by making it control of the display lamp 10 of the injection drop 9 interlocked with.

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of each allocation frontage 2 of the classification shelf 1, respectively and goods are fed into a container 3, it detects that the hand of goods and an operator passes.

[0030] A detection signal is inputted into a controller 7 and a control signal for a goods injection location to make a right case turning on a display lamp 10 green from a controller 7, as shown at drawing 6 is emitted.

[0031] When the goods injection location is mistaken, a control signal is emitted from a controller 7, and the buzzer (not shown) controlled by the controller 7 emits an alarm tone at the same time a pilot light 10 blinks in yellow, as shown in drawing 7 . In that case, an operator is pushing the check carbon button 11 in the side of a pilot light 10, and will rethrow goods into a stop and a right allocation frontage for flashing and the buzzer of a pilot light 10.

[0032] Drawing 1 is what showed this flow of a series of as a flow Fig., and if the goods injection to the classification block which an operator takes charge of is completed, it will publish the detail label attached at push and a delivery-of-goods place in the label issue carbon button 13 prepared in the right end of the injection indicator 9 from the label issue machine 15 located under a controller 7. However, the classification activity of the goods conveyed next is repeated until issue of this detail label is performed after all the commodity classified by the container 3 in that allocation frontage 2 are supplied, and the injection of all the commodity is completed.

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the flow Fig. of the activity by the goods assortment equipment in 1 operation gestalt of the invention in this application.
[Drawing 2] It is the front view for a classification shelf of the goods assortment equipment concerning the invention in this application.
[Drawing 3] It is the conceptual diagram showing the situation of carrying in of the goods to a goods assortment equipment location.
[Drawing 4] It is drawing showing an example of the display format of the turn signal installed for every classification block.
[Drawing 5] The injection drop installed for every allocation frontage is the front view showing the condition of displaying an injection frontage location and the injection number.
[Drawing 6] It is the front view of an injection drop showing a display condition when an injection of goods is performed correctly.
[Drawing 7] It is the front view of an injection drop showing a display condition when goods are incorrect-thrown in.
[Description of Notations]
1 [-- A band conveyor, 5 / -- Goods, 6 / -- A bar code scanner, 7 / -- A controller, 8 / -- A turn signal, 9 / -- An injection indicator, 10 / -- A pilot light, 11 / -- A check carbon button, 12 / -- A number indicator, 13 / -- A detail label issue carbon button 14 / -- A transparency form infrared sensor, 15 / -- Label issue machine] -- A classification shelf, 2 -- An allocation frontage, 3 -- A container, 4

[Translation done.]